

**PATENT ABSTRACTS OF JAPAN**

(11)Publication number : 61-142024  
(43)Date of publication of application : 28.06.1986

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(51)Int.Cl.

B23P 11/02  
C04B 37/02

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(21)Application number : 59-260193

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(22)Date of filing : 10.12.1984

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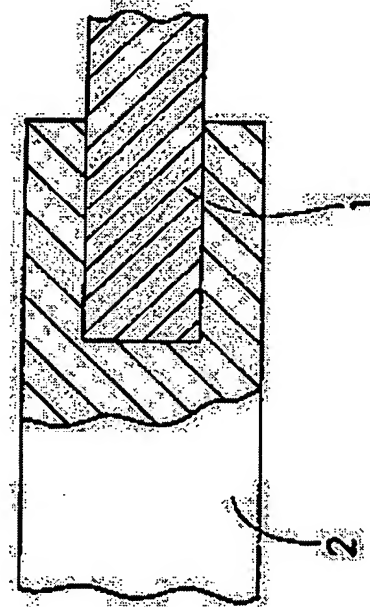
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**(54) SHRINK-FIT OF CERAMIC SHAFT**

(57)Abstract:

**PURPOSE:** To improve the joint strength by heating the vicinity of the surface of the fitting part of a shaft made of ceramics in a short time and fitting a metal member which is heated to a necessary shrink-fit temperature.

**CONSTITUTION:** Only the vicinity of the outer peripheral surface of a shaft 1 made of ceramics which is shaped to the prescribed outer dimension is sharp heated in a short time so that a desired temperature  $T_1$  a little below the critical temperature difference  $\Delta T_c$  is obtained, and a gentle temperature gradient is generated previously in the vicinity of the surface of the shaft 1. In this case, a burner, etc. can be effectively adopted for the heating of the shaft 1. Then, a metal shaft 2 which is heated to a desired shrink-fit temperature  $T_2$  by a proper heating means such as heating furnace is fitted onto the outside of the shaft 1, and cooled as it is, and thus shrink-fit is carried-out. The shrink-fit temperature  $T_2$  of the shaft 2 is selected so that the temperature difference between the surface temperature  $T_1$  on shrink-fit of the shaft 1 becomes less than the critical temperature difference  $\Delta T_c$ .



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**LEGAL STATUS**

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's  
decision of rejection]

[Date of extinction of right]

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